REMARKS

The enclosed is responsive to Examiner's Office Action mailed on October 1, 2007. At the time Examiner mailed the Office Action claims 1-29 and 31-58 were pending. Claims 1-3, 5-21, 26-29 and 31-58 are rejected. Claims 4 and 22-25 are allowed. By way of the present response Applicant has: 1) amended claims 1 and 7; 2) added no new claims; and 3) canceled no claims. As such, claims 1-29 and 31-58 remain pending. Applicant submits that no new matter has been added. Applicant respectfully request reconsideration of the present application and the allowance of all claims now presented.

I.   Claim Rejections – 35 USC §103

Claims 2, 3, 5-11, 14-29 and 31-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miki, et al., U.S. Pat. No. 7,173,932 (hereafter "Miki"). With this response, Applicant does not admit that Miki is prior art and reserves the right to swear behind the reference at a later date.

a. Independent claims 2, 3, 5 and 6

Independent claims 2, 3, 5 and 6 have been rejected under 35 U.S.C. § 103 as being unpatentable over Miki. Applicant respectfully disagrees with this rejection and submits the following remarks in support of Applicant's position.

Applicant submits that Miki does not disclose at least the following bolded limitations contained in exemplary claim 2:

2.   A method in a network element comprising:

using a Point to Point Protocol over Ethernet (PPPoE) session identifier to track a first flow of PPP protocol data units (PDUs) encapsulated with a non-Ethernet protocol;

converting each PDU of the first flow of PPP PDUs into PPPoE PDUs using the session identifier; and

converting each PDU of a second flow of PPPoE PDUs with the session identifier into PPP PDUs encapsulated with the non-Ethernet protocol.

Applicant submits that independent claims 3, 5 and 6 contain substantially the same limitations. As a result, Applicant will discuss these claims together.

With regard to the limitation, "converting each PDU of the first flow of PPP PDUs into PPPoE PDUs using the session identifier," the Office Action cites Miki, figure 1 including an output session processing unit 40 to transmit the flow via Ethernet output interface 50-1. However, Applicant has reviewed the cited sections of the Miki reference and has been unable to discern any part of the Miki reference that teaches converting Point to Point Protocol (PPP) protocol data units (PDUs) with a non-Ethernet encapsulation into Point to Point Protocol over Ethernet (PPPoE) PDUs. Rather, PDUs entering the packet switching apparatus 10 disclosed in Miki, figure 2 are not converted at all. Specifically, any non-Ethernet PDUs received by the Mike reference will be transmitted out of the Mike system using the same non-Ethernet encapsulation. Likewise, any PPPoE PDUs received by the Mike reference will be transmitted out of the Mike system using the same PPPoE encapsulation. There is no disclosure in the Miki reference suggesting otherwise. That is, there is no disclosure in the Mike reference whatsoever that describes switching from a non-Ethernet encapsulation to PPPoE as required by Applicant's claims.

The Office Action's pointing to figure 2 of the Miki reference is erroneous for several reasons. First, Applicant submits that the reason there is no description of converting non-Ethernet flows (such as PPPoX described in Applicant's specification) into PPPoE flows as required by the claims is because the Miki reference does not perform this conversion. Applicant submits that the Office Action's assertion mischaracterizes the Miki Reference. The Office Action asserts that the Miki reference teaches converting between different network flows because it teaches a plurality of input interfaces 30-1 to 30-m corresponding to a plurality of output interfaces 50-1 to 50-m in figure 2 of the Miki reference. The Office Action argues that PDUs received at ATM input interface unit 30-m (non-Ethernet PDUs) must be converted to PPPoE PDUs because they can be transmitted out of Ethernet output interface unit 50-1. This is simply not the case. Rather, the inputs into ATM input interface unit 30-m are output through ATM output interface unit 50-m. There is no description that indicates that inputs into ATM input interface unit 30-m can be converted into a different encapsulation and output through ATM output interface unit 50-m. Further, the example given in Miki figure 5 as described in Miki column 7, line 24-column 8, line 35, indicates that PDUs received on input interface unit 30-2 are output using the corresponding output interface unit 50-2. The result of this is that there is no conversion of flows from one type to flows of another type as asserted by the Office Action. That is, PDUs that come in on one type of media encapsulation are output on the same type of media encapsulation in Miki. For this reason, Applicant believes and strenuously submits that the Miki reference cited by the Office Action does not teach converting from PPPoX flows (i.e., non-Ethernet

flows to a PPPoE flow as required by the claims. Accordingly, Applicant respectfully requests withdrawal of the claim rejections.

Secondly, even if there was converting disclosed in figure 2 of Miki, it is not enabled. Such a conversion would have to take place in the switch unit 12 or output session processing unit 40. Such a structure would look similar to Applicant's figure 2 which clearly describes how a Proxy Module 201 converts the incoming PPPoX flows (i.e., non-Ethernet PDUs) into PPPoE flows 211 and 213. However, both the switch unit 12 and the output session processing unit 40 described in figure 2 of Miki are *black boxes*. Thus, there is no enablement in the Miki reference that describes the conversion. There is also no enablement in the Miki reference that describes a module or device that would perform such a conversion of flows such as the Applicant's Proxy Module 201 disclosed in Applicant's figure 2. Applicant submits, therefore, that the Miki reference is not enabled to convert non-Ethernet flows (PPPoX) into PPPoE flows as required by the claims.

Further, Miki is solving a completely different problem than Applicant's claims require. This is another indicia of nonobviousness which makes the claims patentable over the cited combination. Specifically, Miki was solving the problem of how to combine different access methods into one network box. So, it did not matter in Miki whether a user was a DSL subscriber, a dial-up subscriber, or a mobile wireless subscriber. The Miki system would allow each of these subscribers to connect to their respective networks using the same network box. However, Miki teaches routing these various access methods through a core network using the

same network media using the same encapsulation on the output as the one used on the input. See Miki, Figs. 1, 2 and 5. This is not what an exemplary system that complies with Applicant's claims is designed for. Rather, Applicant's claims are directed at exemplary systems which take network flows coming across different media and convert them into PPPoE flows so that the flows can be transmitted over a *single media*. See Specification, paragraph [0019]. That is, ATM, GRE, MPLS, etc ... flows can all be converted to PPPoE flows so that they can all be transmitted across a *single Ethernet line*. This is advantageous because "[s]witching PPPoX traffic and PPPoE traffic enables the PPPoX and PPPoE traffic to be transmitted over a single media." Id.

> In addition, the switching network element becomes agnostic of the encapsulation [of] the subscriber side, thus providing more flexibility for traffic manipulation for services and increased efficiency and performance. For example, the PPPoX and PPPoE traffic can all be converted to PPPoE traffic and transmitted over GigE media which provides faster transmission at a relatively lower cost than other medias.

Id. The system disclosed in Miki, figure 2 has multiple output lines 50-1 through 50-m. This is not necessary for an exemplary system that complies with Applicant's claims because such a system only needs a single media for output transmission.

Furthermore, with respect to the limitation, "converting each PDU of a second flow of PPPoE PDUs with the session identifier into PPP PDUs encapsulated with the non-Ethernet protocol," the Office Action argues that since Miki teaches a plurality of interfaces (30-1 to 30-m in FIG. 2) to accept PPP PDUs in PPPoX,

it would have been obvious for one having ordinary skill in the art to provide an Ethernet input interface unit to accept PPP PDUs in PPPoE such that the output session processing unit 40 converts each of a flow of PPPoE PDUs with a session identifier into a second flow of PPP PDUs encapsulated with the non-Ethernet protocol to transmit the flow via ATM output interface (50-m in FIG. 2) encapsulated with the non-Ethernet protocol.

See Office Action, p. 4. In response to the previous Office Action, Applicant requested a reference to support this position taken by the Office Action's and was not provided one. Applicant, therefore, reiterates that if Applicant challenges the Office Action's assertion that a feature is well known or common knowledge in the art, the Examiner should cite a reference in support. MPEP § 2144.03. Applicant again challenges the Office Action's assertion that,

it would be obvious to one having skill in the art to provide an Ethernet input interface unit to accept PPP PDUs in PPPoE such that the output session processing unit 40 converts each of a flow of PPPoE PDUs with a session identifier into a second flow of PPP PDUs encapsulated with the non-Ethernet protocol to transmit the flow via ATM output interface unit (50-m in Fig. 2) encapsulated with non-Ethernet protocol.

Id. Applicant submits that the fact that the only reference cited in the Office Action's rejection of Applicant's claims is the Miki reference which, as discussed above, does not disclose, teach, mention or suggest converting PPPoX flows into PPPoE flows shows that it would not have been obvious to a person of skill in the art at the time of Applicant's invention to modify the references as asserted by the Office Action.

Accordingly, Applicant respectfully submits that claims are patentable over the Miki reference and requests withdrawal of the claim rejections. Additionally, Applicant respectfully requests withdrawal of the claim rejections for those

dependent claims which depend, either directly or indirectly, on the aforementioned claims.

b. Independent claim 7

Applicant has amended claim 7 and respectfully requests withdrawal of the claim rejection. Applicant has included the limitation, "converting Point to Point Protocol (PPP) protocol data units (PDUs) encapsulated according to different protocols into PPP PDUs within a uniform Point to Point Protocol over Ethernet (PPPoE) encapsulation." This limitation is substantially similar to the ones contained in the claims argued above, and thus, Applicant respectfully requests withdrawal of the claim rejection for the same reasons as those discussed above. Additionally, Applicant respectfully requests withdrawal of the claim rejections for those dependent claims which depend, either directly or indirectly, on the aforementioned claims.

II.   Claim Rejections – 35 USC §102

Claims 1, 12, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated Miki et al., U.S. Patent No. 7,173,932 (hereinafter "Miki"). Applicant has amended claim 1 and respectfully requests reconsideration and withdrawal of the claim rejection. Applicant has included the limitation, "converting Point to Point Protocol (PPP) protocol data units (PDUs) encapsulated according to different protocols into PPP PDUs within a uniform Point to Point Protocol over Ethernet (PPPoE) encapsulation." This limitation is substantially similar to the ones contained in the claims argued above, and thus, Applicant respectfully requests

withdrawal of the claim rejection for the same reasons as those discussed above. Additionally, Applicant respectfully requests withdrawal of the claim rejections for those dependent claims which depend, either directly or indirectly, on the aforementioned claims.
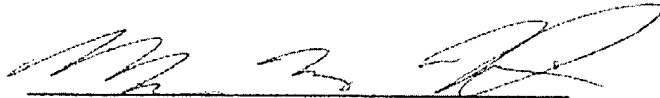
CONCLUSION

Applicant respectfully submits that all rejections have been overcome and that all pending claims are in condition for allowance. If there are any additional charges, please charge them to our Deposit Account Number 02-2666. If a telephone conference would facilitate the prosecution of this application, Examiner is invited to contact Matt Hindman at (408) 720-8300.

Respectfully Submitted,

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